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Title of the Invention: Method of Cutting a Polarizing Plate  
for Liquid Crystal Display Device

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(transliterated, therefore the  
spelling might be incorrect)

**TITLE OF THE INVENTION****Method of Cutting a Polarizing Plate for Liquid Crystal Display Device**

What is claimed is:

- 5       A method employing a blade to cut a polarizing plate for a liquid crystal display device.

**Description of the Invention**

- 10       The present invention relates to methods of cutting a polarizing plate provided with an adhesive for a liquid crystal display device.

- 15       A polarizing plate provided with an adhesive has conventionally been cut to have a normal dimension by employing a punch and a die to die-cut it. In this case, however, if the adhesive of a portion adheres to the punch or the die, the adhesive of that portion is removed from the polarizing plate. This results in poor yields of polarizing plates with an adhesive, since such polarizing plate that is attached to a glass element has an outer peripheral portion hardly ensured in grade. Furthermore, as the polarizing plate with the adhesive is blanked, the adhesive adheres to the punch and the die. Accordingly it is indispensable to clean the punch and the die for each stroke. This results in inefficient workability.

- 20       The present invention contemplates a method of cutting a polarizing plate provided with an adhesive for a liquid crystal display device, that overcomes the aforementioned, conventional disadvantages as it allows the polarizing plate with the adhesive for the liquid crystal display device to be cut to have an outer peripheral cut portion with better quality and can also enhance workability and provide increased yields of such polarizing plates.

- 25       More specifically the present invention is a method of cutting a polarizing plate provided with an adhesive and having top and bottom surfaces with a exfoliate sheet and a protection sheet stuck thereon for protection, that employs a blade and adopts half blanking press to cut it in half. Furthermore the present invention is also a method

employing a release agent of silicon for the blade as an approach to prevent the adhesive from adhesion.

Fig. 1 shows a basic mechanism of a method of cutting in accordance with the present invention.

5           A blade 1 processed with a release agent is bolted and thus secured to a blade holder 2 via a holder 3.

Blade holder 2 is fixed on a top platform 4 of a die set.

Top platform 4 has a guide post 6, which is embedded in a bottom platform 5, fitted therethrough via a spring 7.

10           Bottom platform 5 has embedded therein a hard vinyl chloride plate 8 or the like having appropriately flexibility to prevent blade 1 from having a chipped tip.

A press or the like is used to exert force  $F$  to cause top platform 4 to descend and abut against a height adjustable stopper 9 to position top platform 4. The tip of blade 1 digs into plate 8 and polarizing plate 10 is cut by half blanking press.

15           Polarizing plate 10 with an adhesive, serving as a blank, has an adhesive side with a exfoliate sheet 11 stuck thereon and an opposite side with a protection sheet 12 provided with an adhesive and adhering to the opposite surface to protect polarizing plate 10. The adhesive of the polarizing plate and that of the protection sheet have a property that prevents them from adhering to exfoliate sheet 11 and polarizing plate 10,  
20           respectively, when sheets 11 and 12 are removed.

Thus the present invention allows a polarizing plate with an adhesive to have a cut portion improved in grade, workability to be enhanced, and a cutting step to provide significantly increased yields.

#### BRIEF DESCRIPTION OF THE DRAWINGS

25           The figure shows a front cross section of an apparatus implementing a method of cutting a polarizing plate for a liquid crystal display device in accordance with the present invention.

**Description of Reference Characters**

- |    |     |                                |
|----|-----|--------------------------------|
|    | 1:  | blade                          |
|    | 2:  | blade holder                   |
|    | 3:  | holder                         |
| 5  | 4:  | top platform                   |
|    | 5:  | bottom platform                |
|    | 8:  | hard vinyl chloride plate      |
|    | 10: | polarizing plate with adhesive |
|    | 11: | exfoliate sheet                |
| 10 | 12: | protection sheet               |